ESO 1626

1990 AGRICULTURAL OUTLOOK

EXPENSES, MANUFACTURED INPUTS, INCOME, AND LAND

A Discussion Guide for County Agents

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Slide 1. **U.S. FARM EXPENSES**

a. It's clear from this slide that for the past three years farm expenses are back on the track established in the early 1970's. Visually extending a line formed by the period 1970-1978 will put you right about on target with 1989.

b. The rapidly rising costs of the late 70's and early 80's, the steady expenses of the early 80's, and the declining costs of the mid 80's are behind us.

c. It's helpful to remind ourselves of the reasons for the aberrant behavior of farm expenses during a period that we want to selectively forget and remember, to assist us in looking to the future.

* The rapidly rising costs of the late 70's were primarily a function of expanding production and rapidly rising prices.

* The flat period of the early 80's was the result of stable-to-declining production coupled with less rapidly rising prices.

* The decline in the mid 80's was the result of reduced production and declining-to-steady prices.

* The rise of recent years has been associated with increasing production and rising prices.

Slide 2. **INPUT PRICES: % ANNUAL CHANGE**

a. This slide illustrates the point made earlier. Rapid price rises, 6 to 10 percent per year, were replaced by lower and even negative price changes as we moved into the mid 80's.

b. Prices began to increase in 1987, with a little scare in 1988 that once again inflation would be out of control.

c. Fortunately, price increases stalled this year and are expected to be less next year as the economy cools. Total farm expenses will, however, continue to increase as production expands.

Slide 3. **PRICES PAID BY FARMERS**

a. Looking at the price changes for selective inputs, we can see that all input prices have not behaved the same during recent years.

b. Notice that each of these inputs experienced the same general pattern of price increase followed by a decline and then another period of increase, since 1980.

c. The degree and timing of change has been different for each, however.

d. Fuel and fertilizer experienced the greatest price declines before resuming their upward trend, but both are expected to cost less next year than they did a decade ago.

e. Equipment and chemicals, on the other hand, had less of a decline in price during 85-87 period. Both, however, will set record prices next year.

f. Farm equipment, after a steady to slightly lower price period from 1984 to 1987, has resumed its characteristic rapidly rising price structure--just one of the reasons farmers have been reluctant to replace equipment.

g. Next year's increase in input prices will be modest. Equipment is expected to have the greatest percentage rise in price, 4 to 4.5 percent. OPEC will have difficulty holding things together, and fuel prices will decline marginally, 1 to 2 percent. Chemicals and fertilizer prices will increase a little more, from 2 to 4 percent.

h. Another interesting item shows up as this graph is studied. You need one additional piece of information, however, before it can be clearly seen. The index for all producer items for 1989 will come in at about 166. This means that increases in the price of equipment, at 200, have greatly exceeded the

average for all inputs. On the other hand, look at fertilizer and chemicals. These items, both at about 130, have increased less than average and are in real terms (after inflation) cheaper than they were in 1970. This helps us understand why farmers continue to substitute the less expensive, more effective inputs (chemicals and fertilizer) for the more expensive, less effective inputs (equipment, fuel, and labor). Producers are not likely to willingly switch away from the chemical-intensive agriculture they are, for the most part, using. If we as a society are serious about reducing the amount of chemicals used in production, it will require higher prices for chemicals or laws that strictly reduce their use.

Slide 4. **DOMESTIC FARM TRACTOR SALES**

a. This graph illustrates the plight of machinery dealers and manufacturers, but behind it of course lies the plight of producers. Tractor sales, on an annual basis, were reduced by two thirds, declining from 133 to 47 thousand units, during the first half of this decade. The recovery has been slow. Only about half the purchases of a decade ago are expected in 1990.

b. The sale of 4-wheel drive units all but disappeared in the mid 80's. It was thought that the producers' love affair with large equipment was over and that when they began buying again they would not return to the large 4-wheel

units. Notice, however, that sales of these units have returned with gusto. The economics of large scale production continues to drive farmers to larger and larger equipment.

c. The average horsepower per tractor sold peaked in 1981 at about 110 and then declined to 90 by 1986. It is again rising and will rapidly return to and surpass its previous peak, if farmers continue to replace equipment.

Slide 5. **DOMESTIC COMBINE/HARVESTER SALES**

a. Combine and forage harvester sales declined more precipitously than tractor sales during the slump in farm income and have regained less strength in recent years. Sales dropped by 80 percent and have only recovered to 25 percent of what they were a decade ago.

Slide 6. **U.S. FARM MACHINERY ECONOMIC TRENDS: CAPITAL EXPENSE**

a. By translating sales to dollars, we can see that dollar sales were not hit as drastically as unit sales, evidence of the rapidly rising prices that we discussed earlier.

b. Sales peaked at about $14 billion in 1979, declined by 50 percent to $7 billion by 1986, and will recover to about $9 billion next year. Dealers and manufacturers can look forward to continued interest in new equipment sales for the next couple of years.

Slide 7. **U.S. FARM MACHINERY ECONOMIC TRENDS: CAPITAL EXPENSE AND DEPRECIATION**

a. Here we have a graphic representation of what has been happening to equipment values on the farm. Notice that every year, for the last ten years, depreciation has exceeded capital expense, clear evidence of three things.

b. First, the fact that farmers have been able to curtail equipment capital spending as much as they have suggests they were probably over-equipped a decade ago and were in good position to withstand the downturn in the farm sector.

c. Second, the inventory of equipment present at the beginning of the decade has just about been used up, and farmers--like it or not--are going to find it necessary to make significant investment in equipment in the near future.

d. Third, depreciation will continue to exceed capital expense next year. We could see a reversal in 1991 and surely by 1992.

Slide 8. **REAL NET FARM INCOME**

a. Four distinct periods are evident from this graph. It almost appears that farm income is cyclical, but we want to be careful not to leave that impression.

b. The period of the early seventies saw ever-increasing real net farm income. This was primarily a function of rapidly expanding exports with low rates of inflation.

c. Exports continued at a rapid pace during the late 70's, but inflation was out of hand, causing the initial decline after 1975. The continued decline in the early 80's was a function of declining exports and inflation.

d. The rise that began in the mid 80's and has continued to the present has been a function of three factors: (1) early on the farm program infused money into the farm sector and continues to at a reduced level, (2) the '88 drought and the farm program reduced supplies of major commodities, resulting in higher product prices, and (3) recent growth in export sales has put further upward pressure on prices.

e. What the next three years will bring is uncertain, but all indications point to a declining nominal net farm income because of lower target prices and rising

costs. Coupled with moderate inflation, real net farm income will likely be reduced to the mid to low $30 billion over the next few years.

Slide 9. **BALANCE SHEET OF THE U.S. FARMING SECTOR**

a. The low farm income of the early to mid 80's is reflected in this balance sheet of the farming sector. The loss of 25 percent of asset value, from 1 trillion to $750 billion, between 1981 and 1986 is directly related to those lower incomes.

b. Asset and net worth growth, beginning in 1987 and continuing through this year and next, is largely a function of the government program, of course with the assistance provided by last year's drought.

c. It doesn't show up as dramatically on this slide, but debt reduction has been a significant part of the restructuring of U.S. agriculture during this period. Farm debt peaked in 1983 at $193 billion, declined to $138 billion last year, and probably will hold steady at that level for this year. 1990 could see a slight increase in farm debt but not anything significant. We could even see some decline as farmers use excess cash to further strengthen their financial position.

Slide 10. **U.S. FARM FINANCIAL RATIOS**

a. Each line on this graph illustrates the improving financial condition of the farm sector. Whereas we normally think about a declining line indicating a deteriorating situation, this is not true for all these indicators. On this graph we have indicators of financial liquidity, solvency, and profitability.

b. Solvency, the ability to satisfy all debts in the event of business failure, is measured by the debt-to-asset ratio. A rising line here indicates a worsening condition. The situation gradually worsened during the period 1980 to 1985, going from 17 to 23 percent, as asset values declined and debts continued rise. The situation has improved immensely since 1985 as debt decreased and asset values began to increase. The situation will continue to improve and will likely be 17 percent by the end of next year.

c. Liquidity, the ability to meet cash commitments, can be measured by the percent of gross cash that is required for debt service. In 1982 twenty-three cents of every dollar earned was needed to pay the lender. Reduced debt throughout the period and higher incomes during the more recent years will have reduced that percentage to 12 or less by the end of next year. Ten percent would be a safer position, but it is doubtful if farmers will be able to reduce it to that level, given their need and desire to recapitalize their businesses.

d. Profitability is indicated in this instance by the rate of return to assets. Notice the low return in the early 80's and the steady improvement since 1983. The initial improvement came as a result of declining asset values. The improvement since 1986 has been a direct result of the improved incomes that we saw earlier. Profitability the last few years has been about on target with the long term average of 4 to 5 percent from operating earnings. These figures do not include capital gains or losses. We may see this measure of profitability deteriorate a little in the near future as incomes decline and asset values continue to rise.

Slide 11. **OHIO FARMLAND VALUES: 1970 - 1989**

a. The historical record is quite evident. Land prices in Ohio increased nearly five-fold during the decade of the 70's as export demand drove up prices for an ever-increasing supply of crops. Farmers bid their extra earnings into the price of their most limiting resource--land.

b. Our export market dried up in the early 80's. Looking back, we can see three primary reasons for the decline in exports: (1) the rising value of the U.S. dollar in the foreign exchange market made our exports more expensive overseas, (2) the extended period of high prices of the late 70's encouraged farmers around the world to increase production, reducing the need for imports, and

(3) world debt problems reduced effective demand for our crops. Declining exports and full-out production encouraged by our domestic farm program resulted in excess production, low prices, and declining asset prices. The price of Ohio farmland dropped precipitously about 50 percent in 6 years and stabilized in 1987 at $942 per acre.

c. The last two years have seen renewed confidence in the farm economy as evidenced by the improvement in land prices, up 11 to 12 percent this past spring at $1051 per acre from the earlier low. A good deal of the increase can be attributed to those farmers who have little or no debt and have been building cash reserves in their farm business during the past four years of record farm incomes.

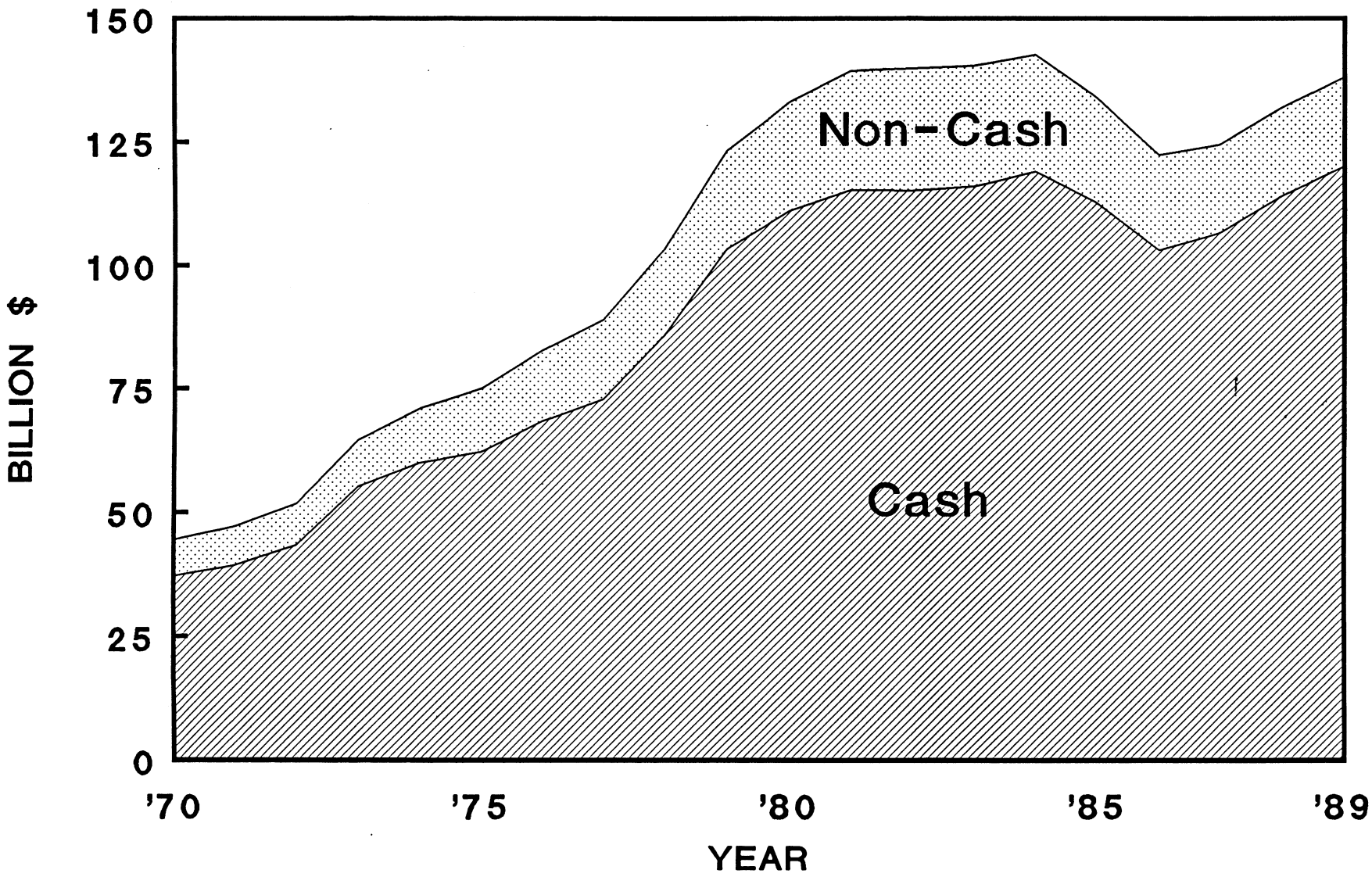
SLIDE 12. **OHIO FARMLAND VALUES: 1970 - 1991**

a. The real question is - "Where are land prices headed from here?" Every indication would suggest that we have at least two more years of rising land prices ahead of us; that is, if we have no major shocks to the system such as a steep recession, a drastic curtailment of government programs, excessive price rises in other major purchased inputs, or a major cutback in exports. If things continue on an even keel, the average land price in Ohio could be more than $1200 per acre by the spring of 1991.

SLIDE 13. **OHIO FARMLAND VALUES: 1970 -1995**

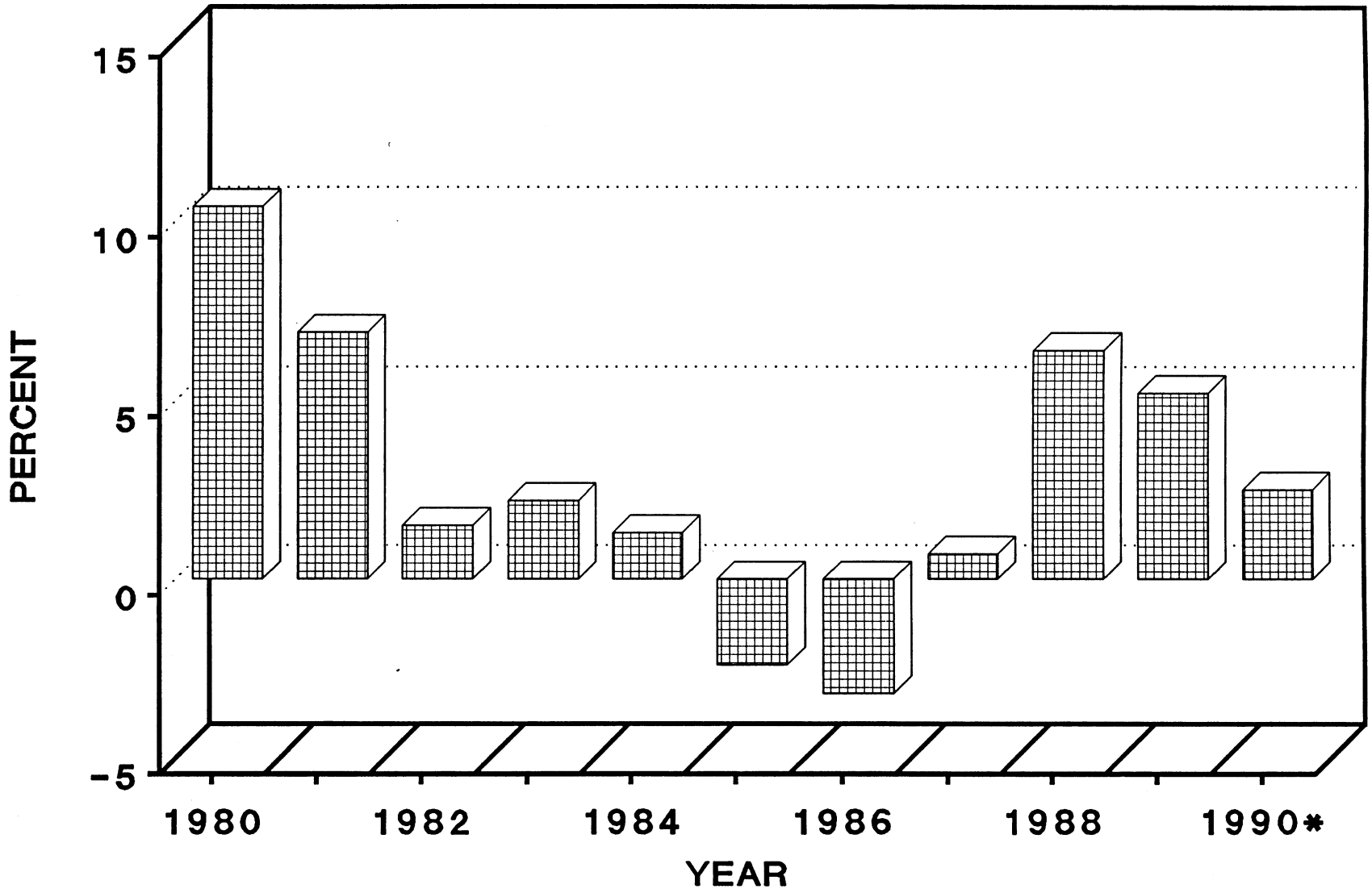
a. Beyond 1991 things are a little less clear. An expected decline in incomes as target prices come down under the new farm bill, the anticipated erosion of net income by inflation as costs escalate, and the use of equity and debt capital to replace equipment rather than buy land could lay the foundation for a negative correction in land price by the middle of the next decade. Rapid domestic inflation, interest on the part of foreign investors, explosive growth in exports, and/or another drought could result in sustained increases in the price of farmland well into the 1990's. Prudent operators will plan for the possibility of lower prices and hope they don't occur.

U.S. FARM EXPENSES
1970-1989



SOURCE: USDA

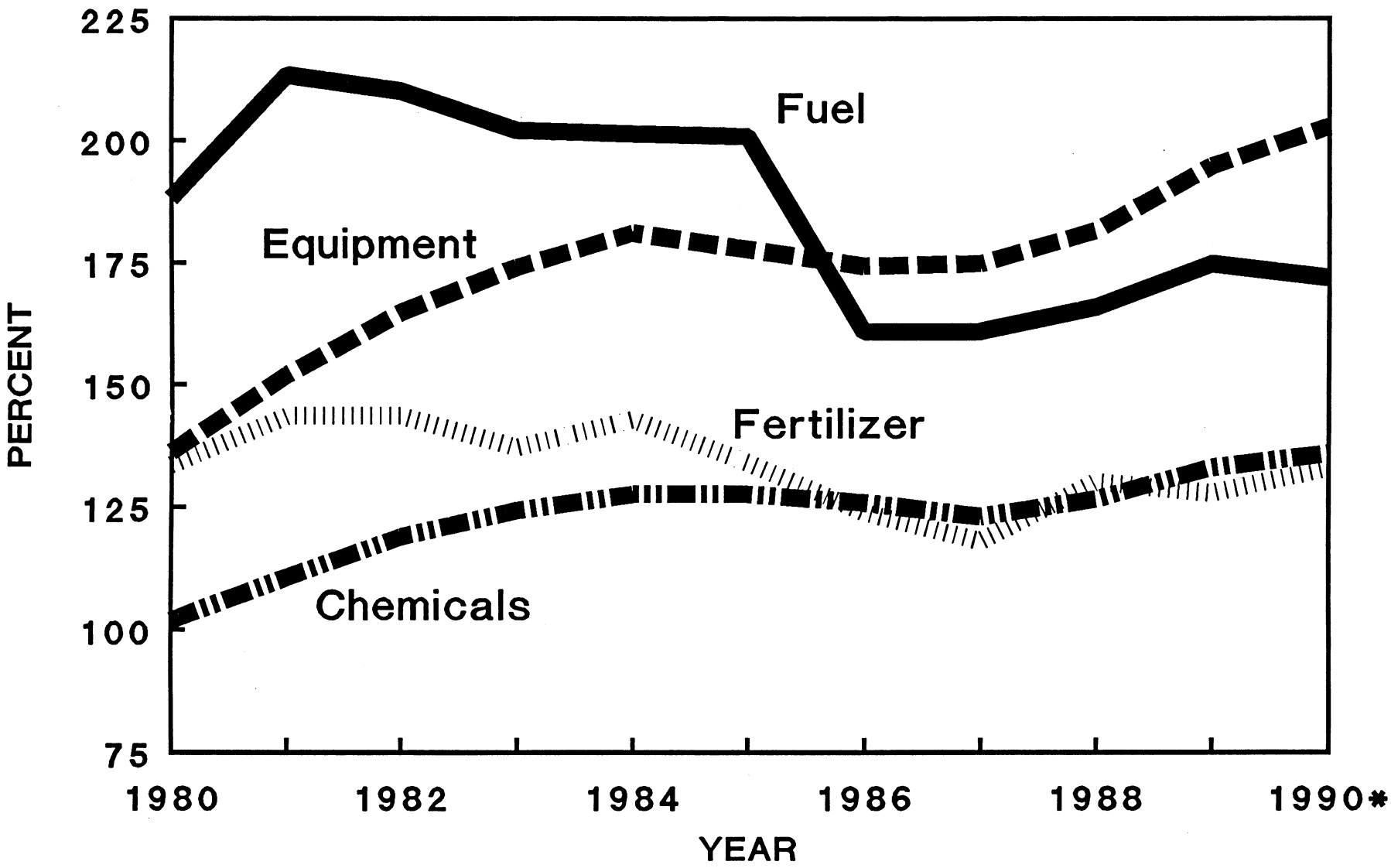
INPUT PRICES - % ANNUAL CHANGE



SOURCE: USDA

* OSU Projection

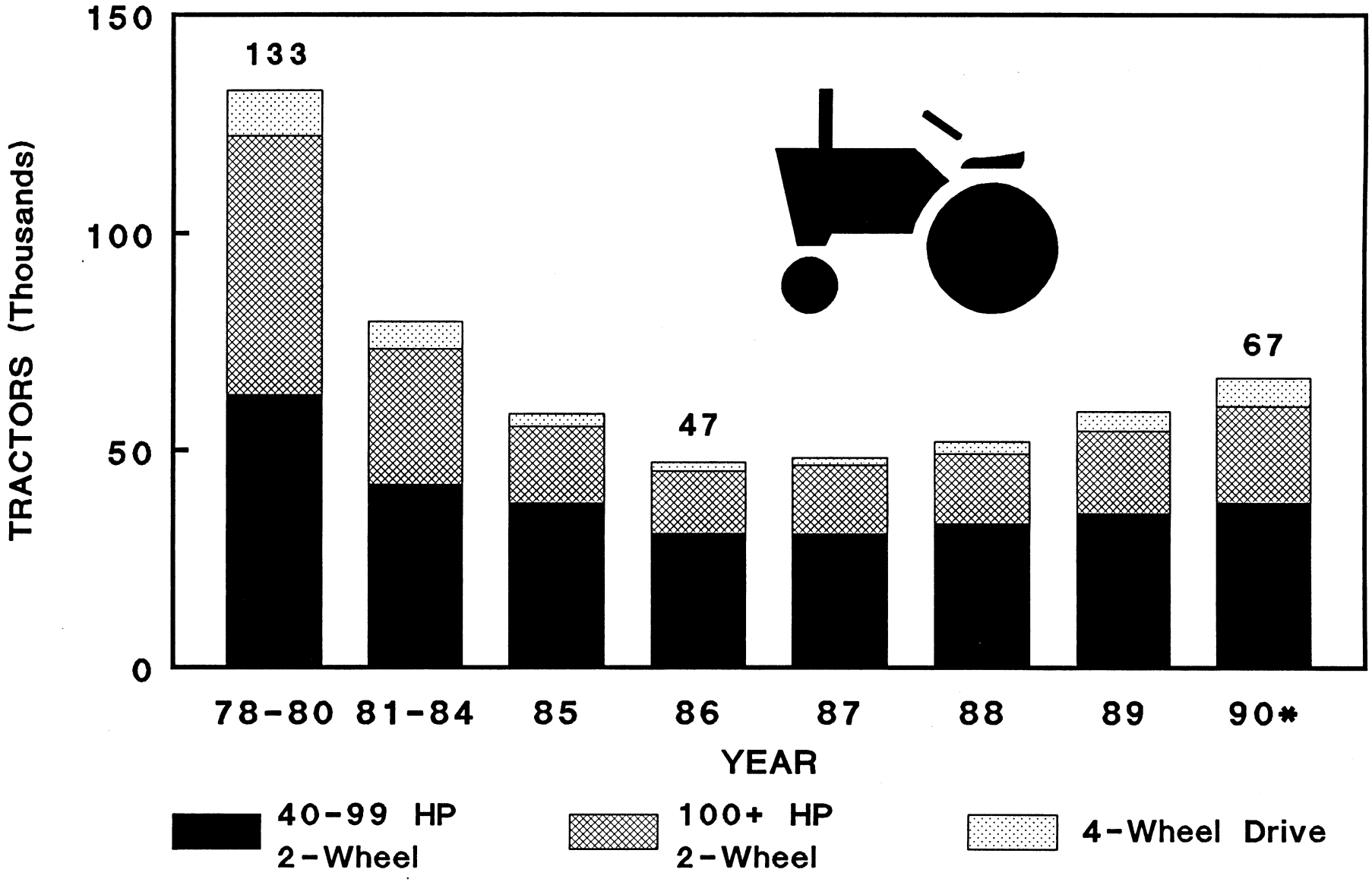
PRICES PAID BY FARMERS
(1977 = 100)



SOURCE: USDA

* OSU Projection

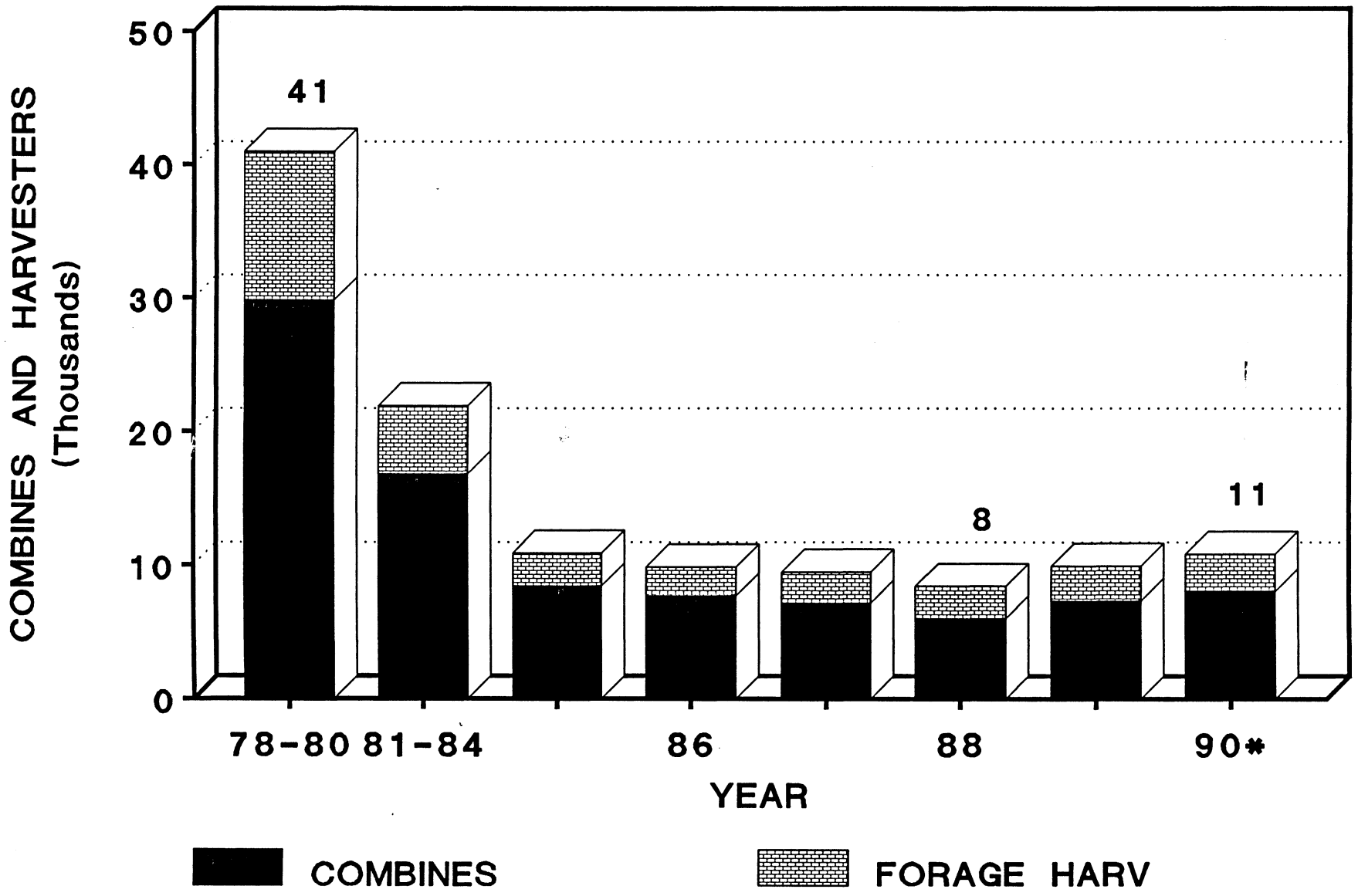
DOMESTIC FARM TRACTOR SALES
UNITS PER YEAR



SOURCE: USDA

* OSU Projection

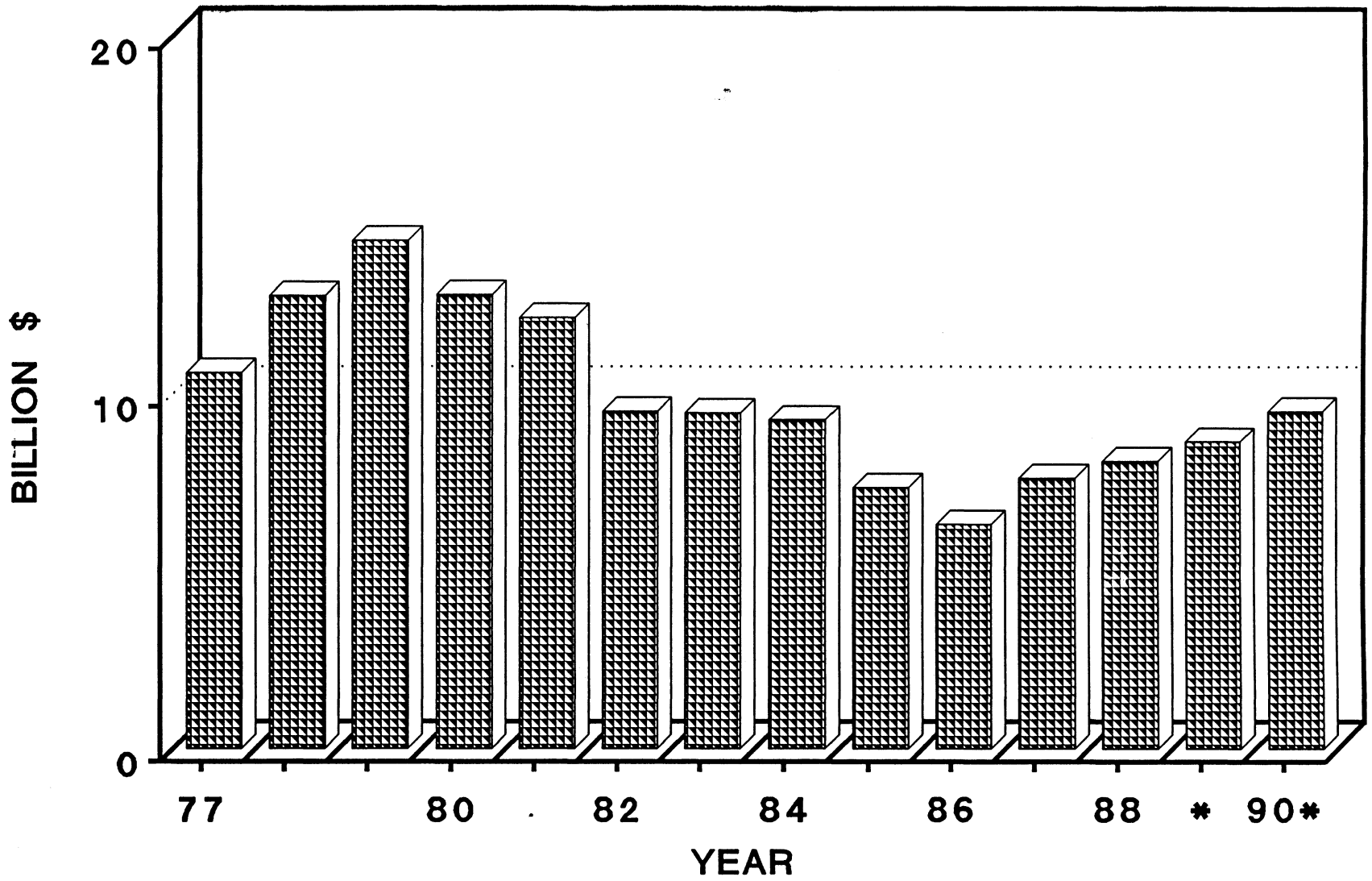
DOMESTIC COMBINE/HARVESTER SALES
UNITS PER YEAR



SOURCE: USDA * OSU Projection

U.S. FARM MACHINERY ECONOMIC TRENDS

CAPITAL EXPENSE

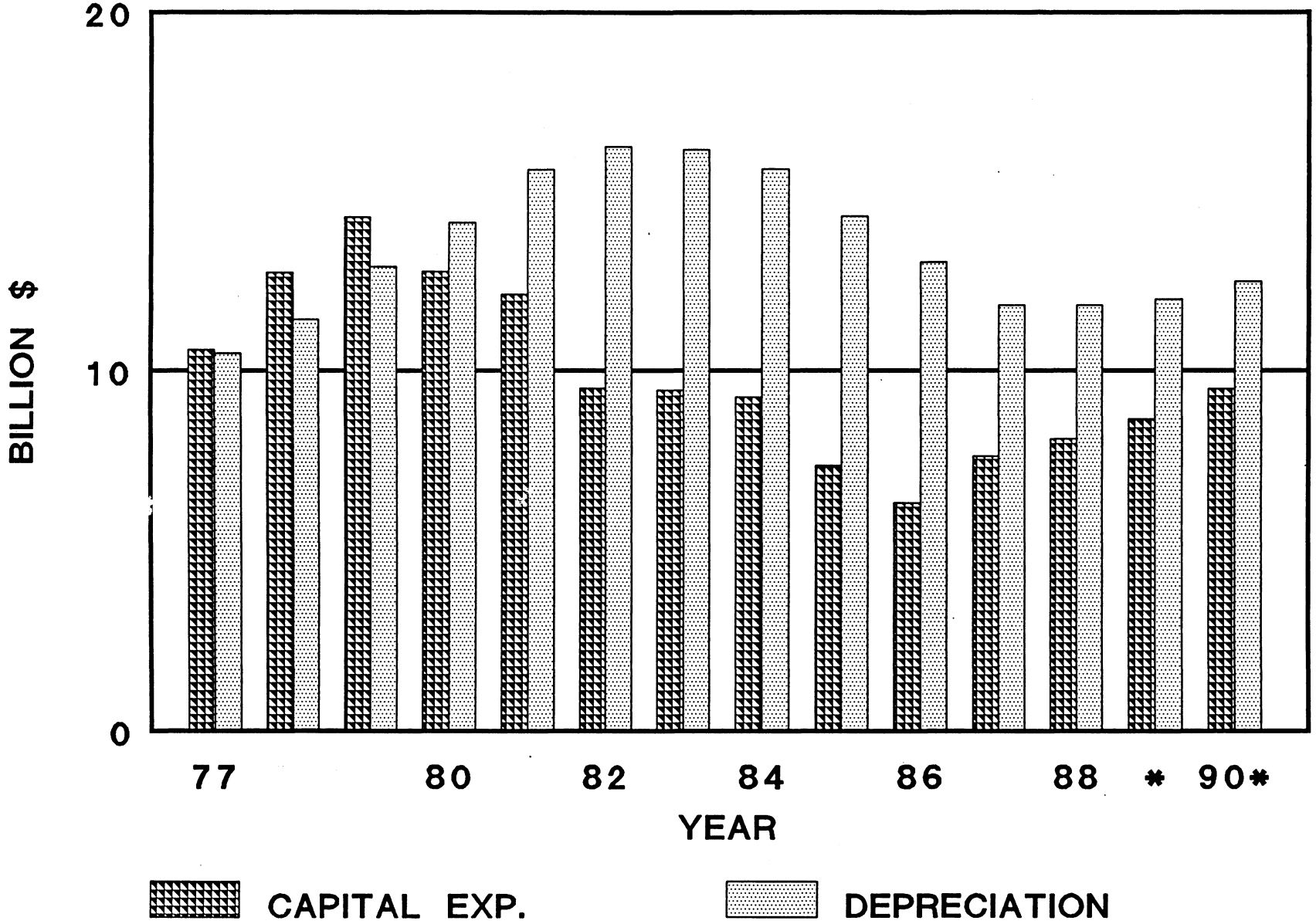


SOURCE: USDA

* OSU PROJECTION

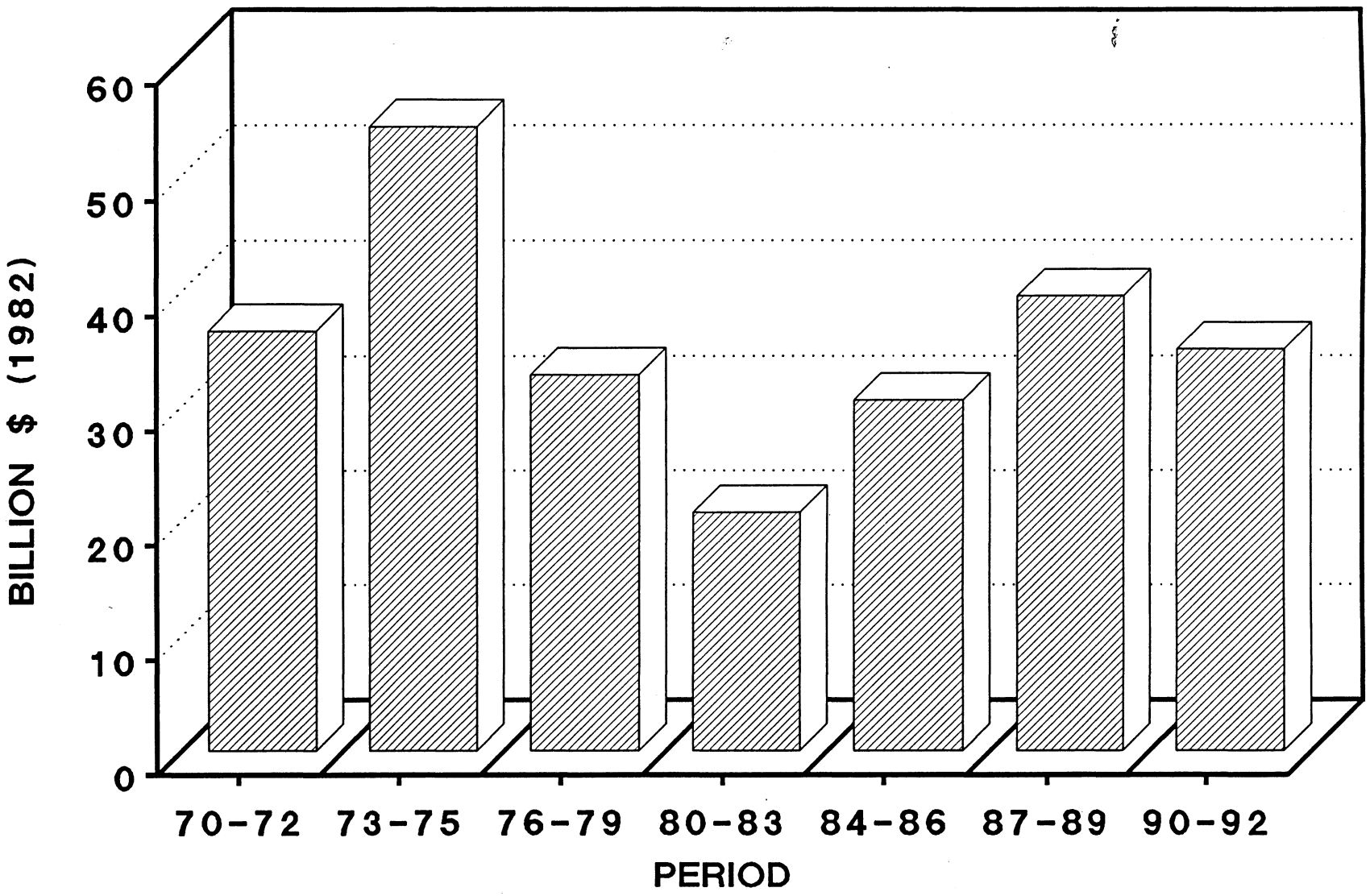
U.S. FARM MACHINERY ECONOMIC TRENDS

CAPITAL EXPENSE AND DEPRECIATION



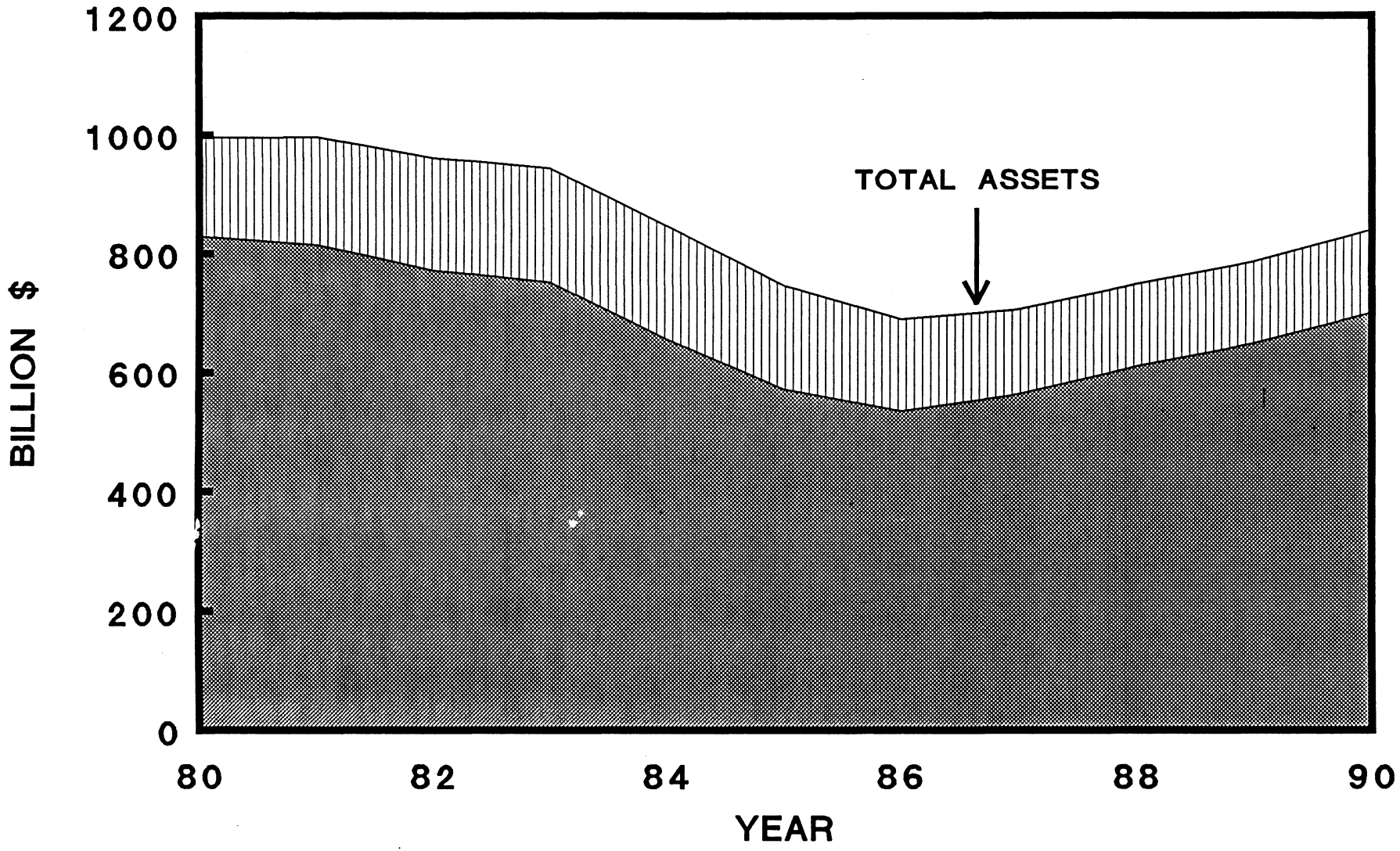
SOURCE: USDA * OSU PROJECTION

REAL NET FARM INCOME
ANNUAL AVERAGE 1970 - 1992



SOURCE: USDA
90-92 OSU Projection

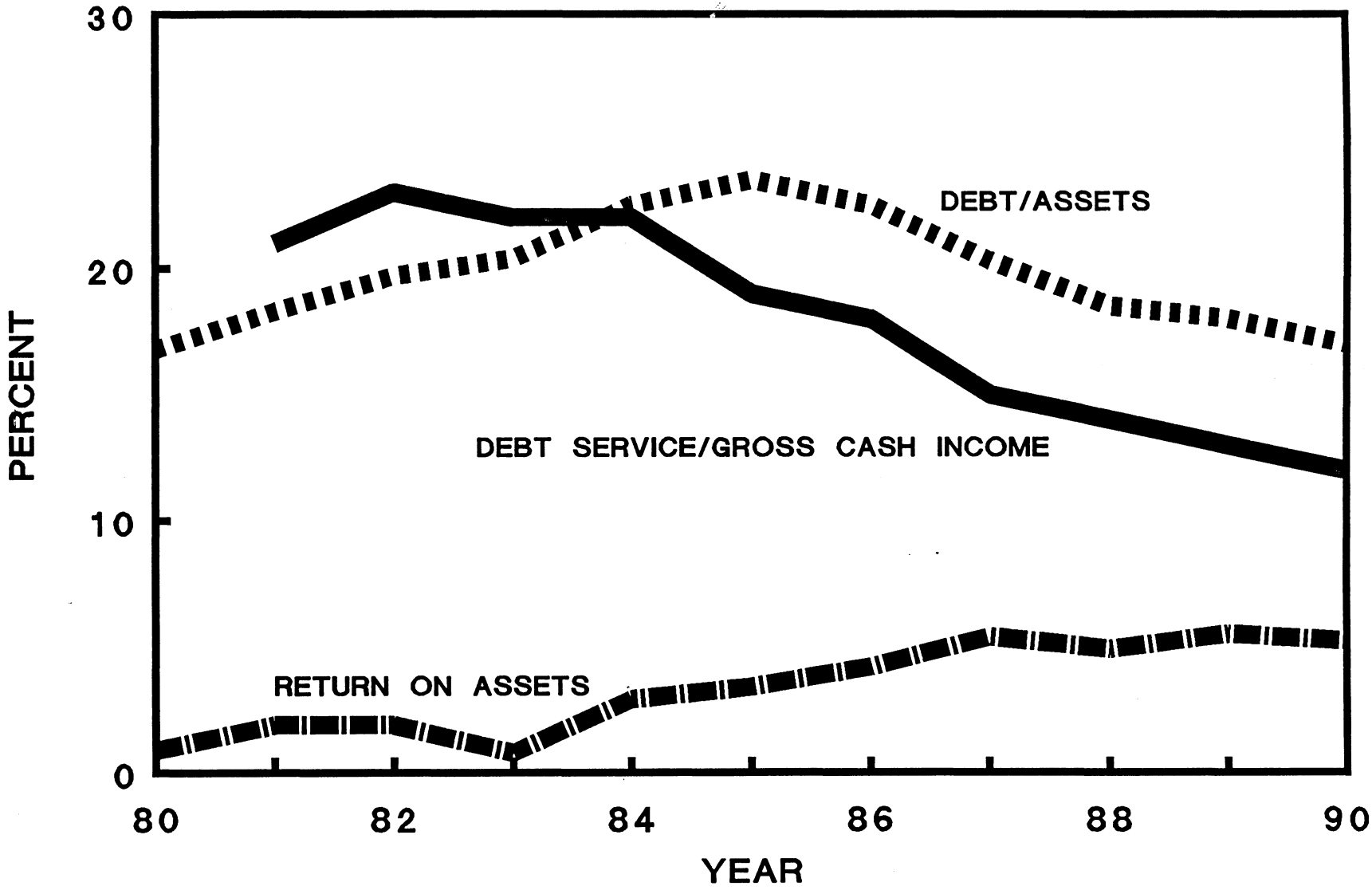
BALANCE SHEET OF THE U.S. FARMING SECTOR
1980 - 1990



SOURCE: USDA

* OSU Projection

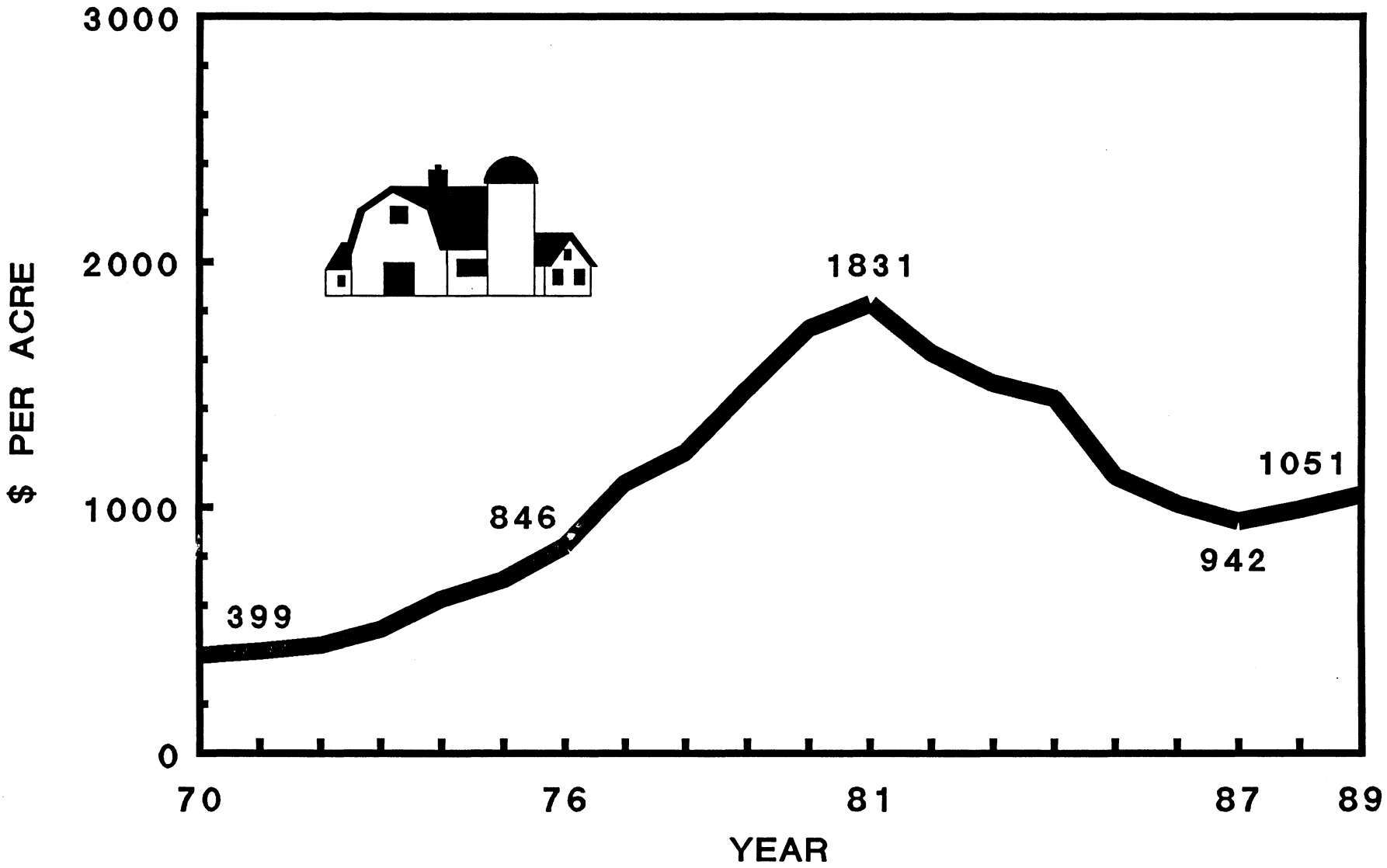
U.S. FARM FINANCIAL RATIOS
1980 - 1990



SOURCE: USDA

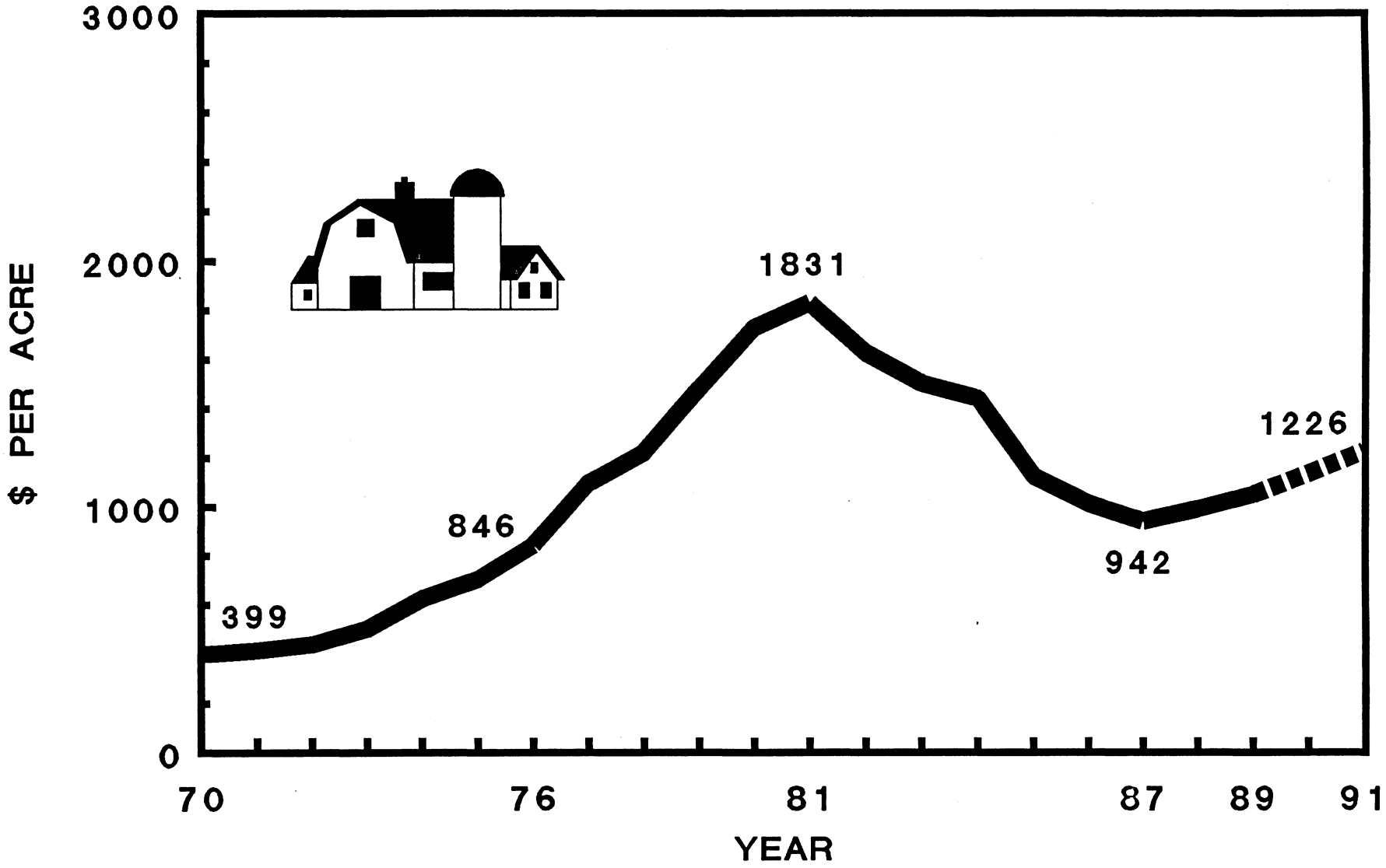
90 OSU Projection

OHIO FARMLAND VALUES
1970-1989



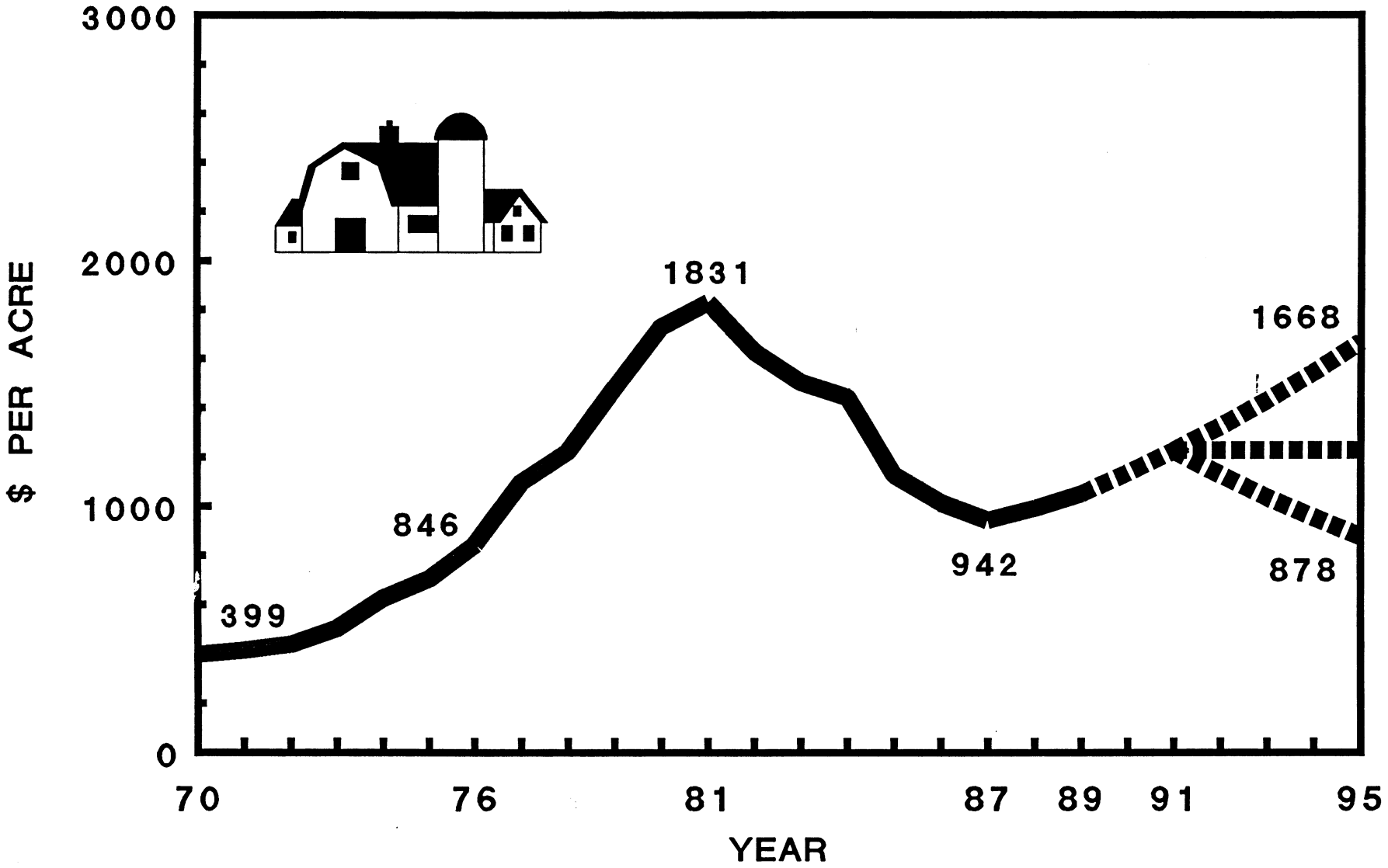
SOURCE: USDA

OHIO FARMLAND VALUES
1970-1991



SOURCE: USDA
90-91 OSU Projection

OHIO FARMLAND VALUES
1970-1995



SOURCE: USDA
90-95 OSU Prediction